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Joseph Weathered

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S)	:	Peter J. WILK
SERIAL NO.	:	09/342,824
FILED	:	June 29, 1999
FOR	:	Apparatus and Method for Resonant Destruction of Tumors
GROUP ART UNIT	:	3737
EXAMINER	:	Eleni M. Mantis Mercader

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTED HEREWITH ARE THE FOLLOWING:

_____ Amendment or Response
_____ Assignment to be Recorded
_____ Fee
_____ Notice of Appeal
_____ Brief on Appeal (in triplicate)
__X__ Other: **Reply Brief**
_____ A check in the amount of is enclosed.
_____ The Commissioner is authorized to charge any additional fees or credit any overpayment to Account No. 04-0838.

Respectfully submitted,

COLEMAN SUDOL SAPONE, P.C.

Dated: January 17, 2006

By: _____
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Enclosures

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REPLY BRIEF

Claim 1 With respect to claim 1, the Examiner maintains that U.S. Patent No. 4,315,514 to Drewes et al. ("Drewes") "clearly teaches that the determination of the appropriate treatment resonance frequency is achieved **for a plurality of cells 32** rather than an individual cell, and furthermore based on this determination **the destruction of the entire tumor 30** is achieved by application of the energy at tumor 30 as a unitary body which is composed of a plurality of cells." (Emphasis in original.)

While Drewes et al. may teach a method for a destroying an entire tumor, the resonant frequencies used to effect this result are not "at a mechanical resonance

frequency of the entire tumor as a unitary body," as set forth in appellant's claim 1. The entire procedure of Drewes with respect to resonant frequencies and damping coefficients is directed to small parts of a tumor. In particular, the resonant frequencies and damping coefficients apply to thinly sliced biopsies of a tumor. A resonant frequency of an entire tumor as a unitary body is necessarily different from each and every one of the many resonant frequencies applied in the method of Drewes et al.

More specifically, the Drewes reference teaches that a relatively thin biopsy is taken and secured to a front face of a piezoelectric crystal. The crystal is then driven at one of multiple resonant frequencies. Column 7, lines 2-9. "To insure the accuracy of this technique, it will be apparent that the specimens cemented to the crystal 16a must be sufficiently thin to avoid effects due to scattering of the ultrasonic beam as it passes through the specimen upon entry and again upon reflection." Column 7, lines 19-24. "To determine the damping coefficients at the other resonant frequencies of the cells 32, the procedure is simply repeated with suitable adjustment of the pulse frequency." Column 7, lines 25-28.

Drewes at al. speak about resonant frequencies of ***cells***, ***not*** about the resonant frequency or frequencies of a ***tumor as a whole***. Clearly, the method of Drewes et al., wherein successive thin biopsies are analyzed to determine resonant frequencies, cannot be used to determine the resonant frequencies of an entire tumor as a unitary body.

Nothing in the teachings of Drewes would lead one of ordinary skill in the art to using a ***resonant frequency of a tumor*** as a unitary body. Instead, the resonant frequencies of Drewes are of parts of a tumor, namely cells.

For the reasons set forth in appellant's previously submitted Brief on Appeal, as well as for the foregoing additional reasons, appellant traverses the Examiner's rejections of claim 1 under 35 U.S.C. §§ 102(b) and 103(a) and maintains that claim 1 distinguishes the invention over the prior art and particularly over Drewes.

Claim 17 With respect to claim 17, the Examiner appears to be saying that because Drewes et al. disclose a processor and transducers in a system pertaining to ultrasonic treatment with a resonant frequency, that the particular structure of appellant's system including the processor programming implicit therein, as set forth in appellant's claim 17, is obvious in view of the prior art.

Appellant contravenes the Examiner's conclusions because the Examiner has not taken into account appellant's invention as a whole as described in claim 17. Taken as a whole, appellant's claim 17 describes a system wherein transducers are provided for producing first pressure waves inside a patient, such that internal tissue structures of the patient produce second ("incoming") pressure waves in response to the first pressure waves, and the system includes a processor that analyzes the second pressure waves to determine resonant characteristics of the internal tissue structures. In a word, this system provides for *in vivo* measurement of resonance characteristics of a patient's internal tissue structures.

In the language of appellant's claim 17, appellant's system includes "an acoustic signal processor operatively connected to at least some of said transducers programmed to analyze incoming pressure waves to determine mechanical resonant characteristics of ***internal tissue structures of a patient***." The incoming pressure waves are generated by the internal tissues structures in response to "energizing said transducers with electrical signals of a plurality of pre-established frequencies to produce ***first pressure waves in the patient***."

In contrast, in the method of Drewes, the tissues have been excised from the patient in a biopsy procedure and are therefore external to the patient during the testing and analysis of resonant behavior.

For the reasons set forth in appellant's previously submitted Brief on Appeal, as well as for the foregoing additional reasons, appellant traverses the Examiner's rejections of claim 17 under 35 U.S.C. § 103(a) and maintains that claim 17 distinguishes the invention over the prior art and particularly over Wilk `446, Granz et al. and Drewes.

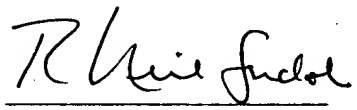
Claim 23 With respect to claim 23, the Examiner appears to ignore the limitations in the claim as to the use of ultrasonic and sub-ultrasonic pressure waves. Wilk '446 discloses a system and method that generates and senses pressure waves solely in an ultrasonic frequency range. Nothing in Wilk '446 suggests the generation of pressure waves "in a range below ultrasonic." Also, as set forth in appellant's Brief on Appeal, none of the references relied on by the Examiner suggest the monitoring of resonant motion of tissue structure in a patient.

For the reasons set forth in appellant's previously submitted Brief on Appeal, as well as for the foregoing additional reasons, appellant traverses the Examiner's rejections of claim 23 under 35 U.S.C. § 103(a) and maintains that claim 23 distinguishes the invention over the prior art and particularly over Wilk '446, Granz et al. and Drewes.

Respectfully submitted,

COLEMAN SUDOL SAPONE, P.C.

Dated: January 17, 2006

By: 

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